Exercise 7-1

This is an individual exercise to practice storing horizontal alignments.

1. Open the MicroStation file **t:\de-proj\randolph\j2p0200\data\plan_j2p0200.dgn**.

2. Enter Coordinate Geometry.

3. Use **Coordinate Geometry**, **Graphical COGO**, or **Horizontal Alignment Generator** to create the alignments as shown on the following pages.

   Do not worry about the graphics (stationing, curve data, etc.) being plotted. These items will be discussed in later chapters.

Route 63

Beginning Point: X = **1676434.4103** Y = **1262365.4715**

Ending Point: X = **1678994.1614** Y = **1257205.0288**

Intersect the PI point using the direction back and direction ahead of the spiral-curve-spiral.

Store the spiral-curve-spiral **RTE63-1**

Direction Back	= **S 0° 20’ 19.8” E**
Length of the back spiral	= **324’**
Degree of Curve	= **2° 30’ 00”**
Length of the ahead spiral	= **324’**
Direction Ahead	= **S 45° 39’ 27.2” E**

Store the alignment as **RTE63** with a beginning station of **9+50.00**.

Outer Road

Beginning Point: X = **1676792.0050** Y = **1260393.1372**

Ending Point: X = **1679002.6087** Y = **1257759.8897**

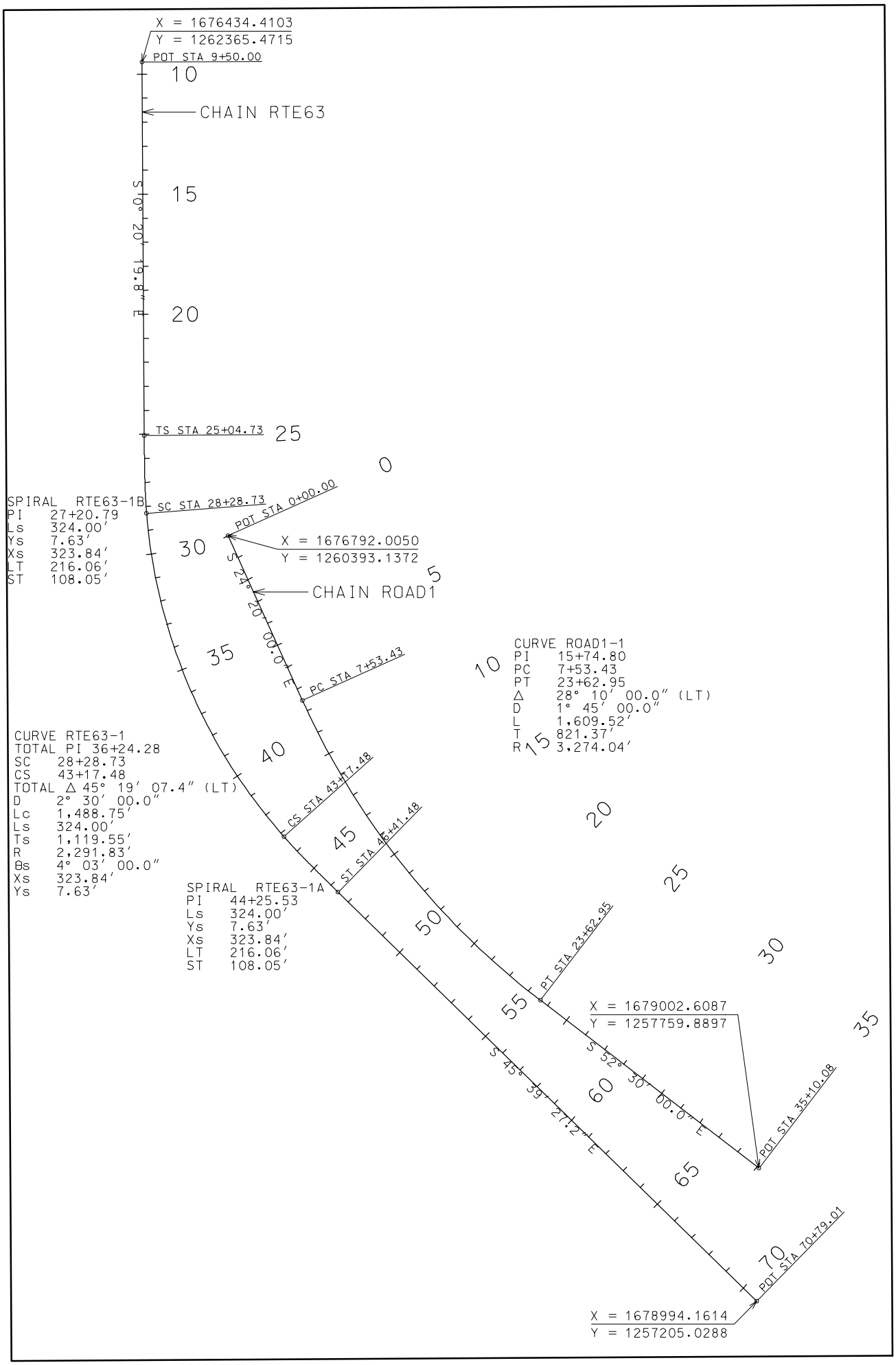
Intersect the PI point using the direction back and direction ahead of the curve.

Store the curve **ROAD1-1**

Direction Back	= **S 24° 20’ 00.0” E**
Degree of Curve	= **1° 45’ 00”**
Direction Ahead	= **S 52° 30’ 00.0” E**

Store the alignment as **ROAD1** with a beginning station of **0+00.00**.

Make sure there are no kinks in the alignments and that you have meet the above design parameters.


X = 1676434.4103
Y = 1262365.4715
POT STA 9+50.00
CHAIN RTE63
S 10° 20' 19.8" E
TS STA 25+04.73
SC STA 28+28.73
SPIRAL RTE63-1B
PI 27+20.79
Ls 324.00'
Ys 7.63'
Xs 323.84'
LT 216.06'
ST 108.05'
POT STA 0+00.00
X = 1676792.0050
Y = 1260393.1372
CHAIN ROAD1
S 24° 20' 00.0" E
PC STA 7+53.43
CURVE ROAD1-1
PI 15+74.80
PC 7+53.43
PT 23+62.95
Δ 28° 10' 00.0" (LT)
D 1° 45' 00.0"
L 1,609.52'
T 821.37'
R 3,274.04'
CURVE RTE63-1
TOTAL PI 36+24.28
SC 28+28.73
CS 43+17.48
TOTAL Δ 45° 19' 07.4" (LT)
D 2° 30' 00.0"
Lc 1,488.75'
Ls 324.00'
Ts 1,119.55'
R 2,291.83'
θs 4° 03' 00.0"
Xs 323.84'
Ys 7.63'
CS STA 43+17.48
ST STA 46+41.48
SPIRAL RTE63-1A
PI 44+25.53
Ls 324.00'
Ys 7.63'
Xs 323.84'
LT 216.06'
ST 108.05'
PI STA 23+62.95
X = 1679002.6087
Y = 1257759.8897
S 52° 30' 00.0" E
POT STA 35+10.08
S 43° 39' 27.2" E
POT STA 70+79.01
X = 1678994.1614
Y = 1257205.0288

4. Upon completion of storing the alignments in coordinate geometry, close **coordinate geometry**, **graphical cogo**, and **Horizontal Alignment Generator**.

5. Delete all of the graphics in the MicroStation drawing by going to **Edit>>Select All**, and then selecting the **Delete** button.